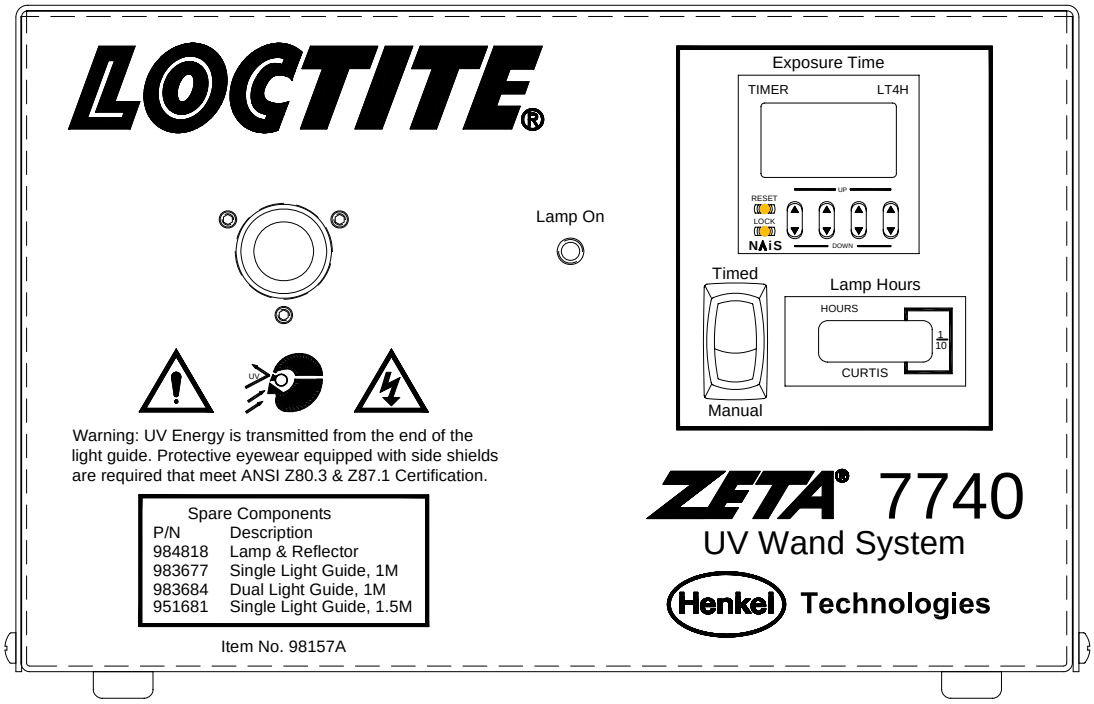
LOCTITE®

EQUIPMENT
Operation Manual



Loctite® Zeta® 7740 UV Curing Wand System

Part Number: 98157A

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1. Please Observe the Following

1.1 Emphasized Sections

⚠ **WARNING!**
Refers to safety regulations and required measures that protect the operator or other persons from injury or danger to life.

! **Caution!**
Emphasizes what must be done or avoided so that the unit or other property is not damaged.

☞ **Notice:**
Gives recommendations for better handling of the unit during operation or adjustment, as well as for service activities.

1.2 Items Supplied

1 ZETA® 7740 UV Curing Wand System
1 Pair of UV protective glasses
1 Foot switch
1 Users manual
1 Power cord

1.3 For Your Safety

For safe and successful operation of the unit, read these instructions completely. If the instructions are not observed, the manufacturer can assume no responsibility. Be sure to retain this manual for future reference.

⚠ **WARNING!**
Always wear the included UV safety glasses or glasses that conform to ANSI Z87.1/CSA Z94.3 when operating the unit.

⚠ **WARNING!**
Always cover hands, face and other parts of the body that may be exposed to UV light.

⚠ **WARNING!**
Never look into the end of the light guide.

⚠ **WARNING!**
Never open the shutter mechanism without the light guide installed.

⚠ **WARNING!**
Never remove the cover of the unit without first switching the power off and unplugging the power cord.

⚠ **WARNING!**
Damage to the power cord or the housing can result in contact with live electrical parts. Check the power cord and housing before each use. If the power cord or unit is damaged, do not operate.
The unit may be repaired only by a Loctite authorized service technician.

1. Please Observe the Following (continued)

Caution!
Never turn the unit on without the lamp connected to the power supply.

Caution!
The energy emitted from the end of the light guide can heat any surface that it is directed at. Care must be taken to determine the proper offset distance and exposure time.

Caution!
Turning the lamp on and off frequently will cause the UV output of the lamp to decline at a faster rate. It is recommended that the unit be left on during breaks and short down times.

Caution!
Avoid making sharp bends in the light guide, as this will cause a loss of UV energy or possibly cause permanent damage. To prevent permanent damage, the minimum bend radii are 2.4 inches for a single light guide and 1.6 inches for a dual light guide.

1.4 Field of Application, (Intended Usage)

This Loctite® ZETA® 7740 UV Curing Wand System is designed for use with Loctite products that cure when exposed to ultraviolet light produced by the unit. The UV energy is directed towards the product through a liquid filled light guide that is ordered separately. Several configurations of light guides are available from Loctite, including single and dual ended types. The unit is also capable of interfacing with an external relay or PLC circuit.

2. Description

2.1 Theory of Operation

When the unit is switched on, electrical power is immediately supplied to the lamp and ignition should occur within several seconds. As soon as the lamp ignites, the green, "Lamp On" indicator, located on the panel, will come on. Also, an internal relay will change state, making a closure across pins three and four of the footswitch connector, located on the rear panel of the unit. It will take several minutes for the lamp to reach full power. Curing takes place when the shutter is opened, allowing UV light to be directed from the end of the liquid filled light guide to the adhesive. The curing parameters, (UV irradiance and exposure time) must be determined before use. The UV irradiance at the adhesive surface can be varied by adjusting the distance of the light guide from the bond. If the light guide is moved to within ½ inch of the adhesive surface, vapors from the curing process may build up on the end of the light guide, reducing the UV intensity. The exposure time required to complete the curing process depends primarily on the UV irradiance and the properties of the adhesive product.

The timed exposure cycle starts by momentarily engaging the footswitch or when an externally operated device such as a PLC makes a relay closure across pins 1 and 9 of the nine pin footswitch connection on the rear panel. In the manual operating mode, the shutter remains open for as long as the footswitch or alternate external device maintains contact between pins 1 and 9.

2. Description (continued)

The hour meter, located on the front panel, records the total hours of operation accumulated by the lamp. UV lamps undergo a gradual reduction in UV output over time and it is recommended that the lamp output be monitored on a regular basis. Turning the lamp on and off frequently will speed up the degradation process, therefore, it is recommended that the unit be left on during short work breaks such as lunch and other idle periods.

☞ Notice: The hour meter should only be reset when a new lamp is installed.

2.2 Operating Elements and Connections, refers to Figure 1

1. Power Inlet Module
   Connect the line cord to power inlet module.
2. Power Fuse Holder
   Fuse is located in the power module.
3. Power Switch
4. Foot Switch Connection
   Standard 9 pin “D” connector for foot switch or other external switch.
5. Light Guide Receptacle
   Is used to retain the light guide.
6. Digital Exposure Timer
   Controls the period of time the shutter is opened. The UV time is set by pressing the buttons located directly under the LCD, which indicates seconds. The manual/timed selector switch must be set to "timed.” When the foot switch is engaged the shutter mechanism will open for the indicated time and the timer will begin counting down. When the unit times out the shutter will close and the LCD will indicate the original pre-set time interval.
7. Lamp Hour Meter
   The hour meter indicates the cumulative time that the lamp has been ON.
8. Mode Selector – Manual/Timed
   When set to “manual” the UV light is passed through the light guide for as long as the foot switch is pressed. In the “timed” mode, the timer’s LCD display indicates exposure time and the cycle is initiated when the foot switch is momentarily engaged.
9. Lamp On Indicator
   The lamp will ignite when the main power is switched on. The green lamp on indicator located on the front panel will light to confirm that the lamp is operating. An internal relay connected to pins three and four of the footswitch connector will also close to indicate that the lamp is on.

2. Description (continued)

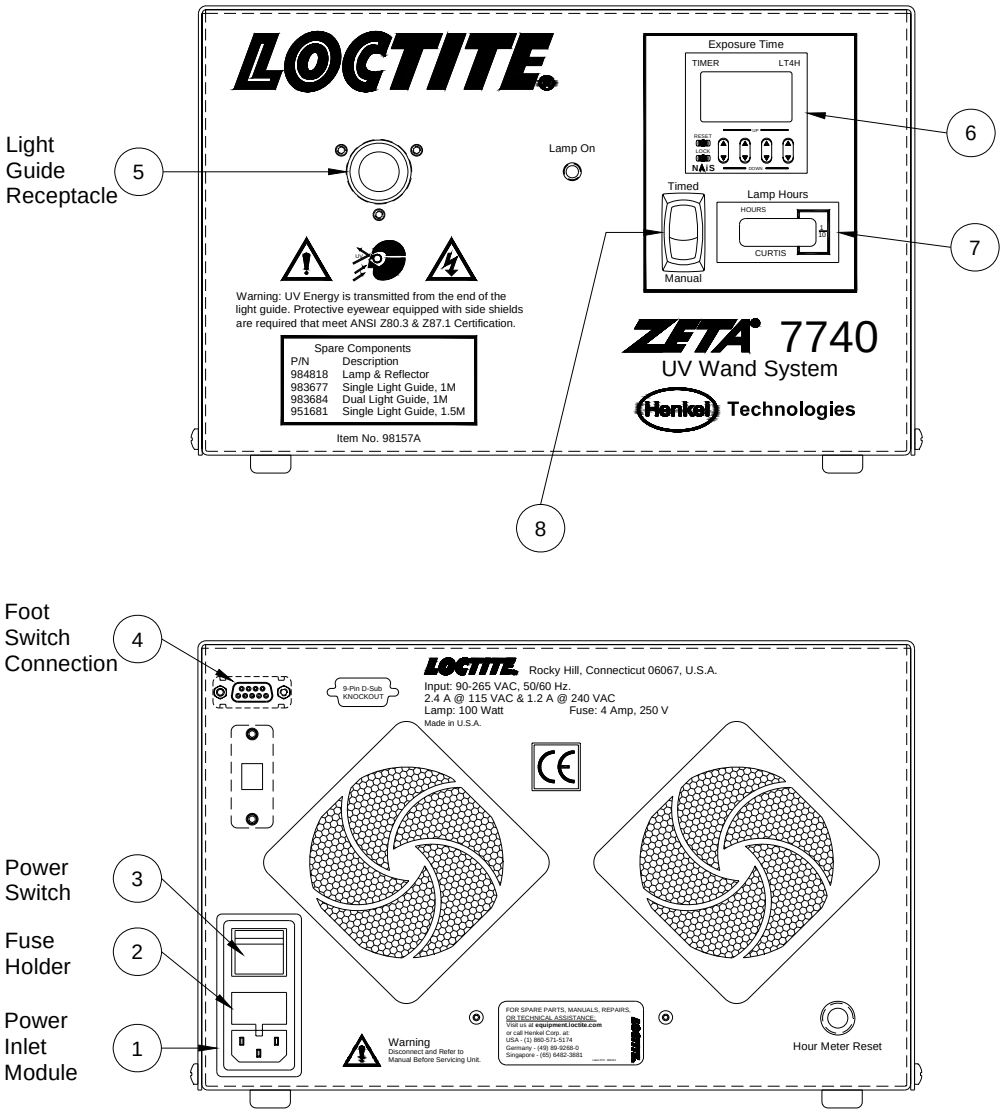


Figure 1.

3. Technical Data

3.1 Energy Requirements

Power Supply: 90-132 VAC or 180-265 VAC, 50/60 Hz.
Power Protection: 4A/250V fuse
Auxiliary Control Voltage: 24 volts DC
Main fuse located in power module in rear of unit: 4A, 250V

3.2 Dimensions

Width 11.0 inches
Depth: 12.5 inches
Height: 7.6 inches
Weight: 18 pounds
Light Guides (supplied separately)
Single end light guide, part 983677 – 1000mm long x 5mm diameter
Single end light guide, part 951681 – 1500mm long x 5mm diameter
Dual end light guide, part 983684 – 1000mm long x 3mm diameter

3.3 UV Output Characteristics

Typical output:	9 - 11 W/sq.cm (using 5mm x 1000mm lightguide)*
UV Spectral Range:	200 – 400 nM
Primary Peak:	365 nM
Secondary Peaks:	315, 335 nM

*Exact output measurement is dependent on the brand and calibration method of the meter used, as well as the condition and straightness of the light guide.

4. Installation

4.1 Space Requirements

A space of 12" wide x 16" deep x 8" height is required. It is important to have at least 8 inches of space behind the unit to insure proper airflow. The Loctite® ZETA® 7740 UV Curing Wand System only needs to be connected to a 120V/60Hz outlet to operate.

Caution!
Do not block the intake and exhaust fans located on the back of the housing.

Caution!
The unit should always be operated with the rubber support feet resting on a flat surface.

Caution!
Do not operate with the unit resting on its side or at an angle greater than 15 degrees, front to back.

5. Operating the Unit

5.1 Inserting and Removing the Light Guides

Caution!
Be sure to remove the plastic end caps before attempting to use the light guide.

Caution!
If the free end of the light guide is secured at a fixed location, sharp bends should be avoided as it will cause a decrease in UV power.

Caution!
Never pull on the jacketing portion of the light guide. During installation or removal, grasp the light guide on the strain relief nearest the input end of the light guide.

- Installing single light guide - Insert the large end of single light guide into the light guide receptacle located on the left side of the front panel. Push light guide firmly until it is fully engaged.
- Installing dual light guide – Insert the dual wand light guide into the light receptacle and rotate the collar assembly so that the scribed line on the collar is in the 12 o'clock position. See section 5.3 "Adjusting Wand for Maximum Output."

☞ **Notice:**
It is important that the rotational position of a dual light guide be set to maximize the UV output for each wand. This setting is specific to each curing unit and light guide (See section 5.3 - Adjusting Dual Wand).

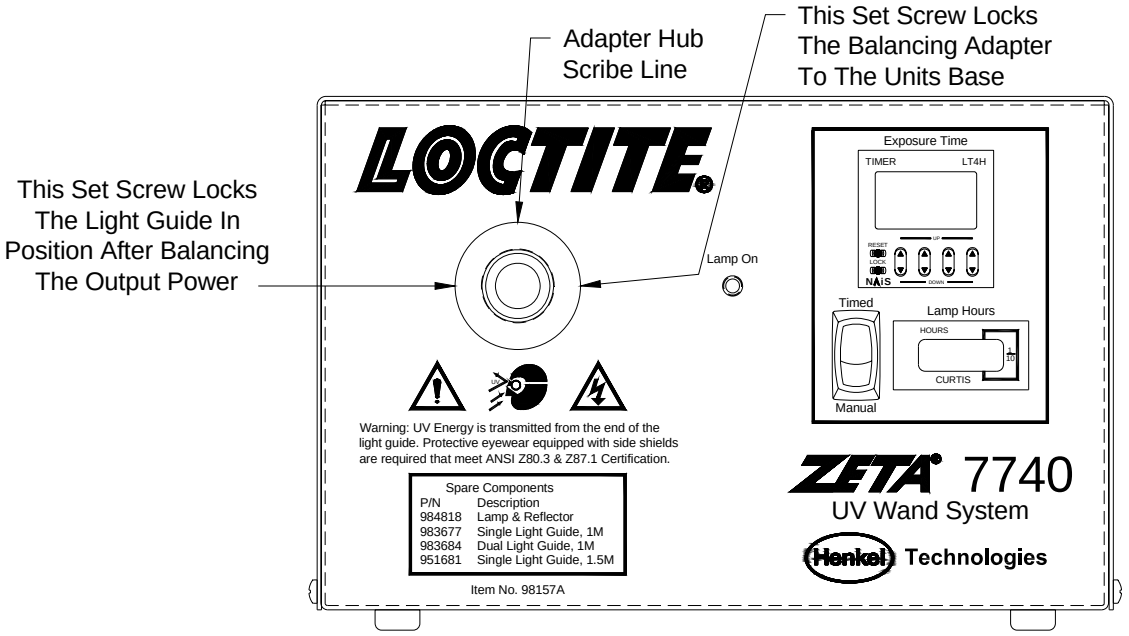
5.2 Powering Up

1. Switch the main power ON. The power switch is on the lower left of the rear panel.
2. The green LED on the front panel will come on to confirm that the lamp has ignited and an internal relay will make a closure across pins three and four of the footswitch connector.
3. Allow approximately five minutes for the lamp to reach full power.
4. Set the operating mode selector switch to "timed" or "manual". For manual operation, engage the footswitch to start UV exposure and hold until the curing cycle is complete. When the footswitch is released the exposure will end immediately. For timed operation use the keys directly below the numbers on the display to set the desired exposure time. Momentarily engage the footswitch to start the cycle. The UV exposure will begin immediately and continue until the system times out.
5. UV exposure cycles may be initiated by using an externally operated device, such as a PLC controlled relay in place of the footswitch.

Notice:
Avoid shutting the main power off for brief periods of time. Frequent start-ups will cause the lamp to decay at an accelerated rate. If the system is shut down, wait a minimum of ten minutes before restarting. Once the lamp is ignited, allow it to operate for a minimum of fifteen minutes before turning it off.

5. Operating the Unit (continued)

5.3 Adjusting Dual Wand for Maximum Output



Objective

Balance the UV output from the two light guides of Loctite® P/N 984589.

Tools Needed

3/32 inch hex key

Loctite® 98720 UV Spot Radiometer P/N: 1079258

5. Operating the Unit (continued)

Setup

1. Install the collar assembly over the part of the light guide receptacle that protrudes from the front of the unit. Rotate the collar assembly until the scribed line is in the 12 o'clock position. Use the set screw to secure the collar in that position.
2. Insert the input end of the light guide into the light guide receptacle/collar assembly pushing it as far forward as it will go. Tighten the set screw on to the light guide.
3. Turn on electric power to unit.
4. Set shutter timer to 2 seconds.
5. Insert one of the light guide ends into a Loctite® 98720 UV Spot Radiometer P/N: 1079258.
6. Press the radiometer start switch.
7. Actuate foot switch to open shutter.
8. Release the radiometer start switch while the shutter is still opened.
9. Read and record the radiometer reading.
10. Position the second light guide in the radiometer.
11. Press the radiometer start switch.
12. Actuate foot switch to open shutter.
13. Release the radiometer start switch while the shutter is still opened.
14. Read and record the radiometer reading.
15. Compare the two radiometer readings.

☞16. If the lower reading is equal to or greater than 90% of the higher reading, the dual wand is balanced.

17. If the lower reading is less than 90% of the higher reading, loosen the set screw and rotate the collar a small increment around the light guide receptacle. Use the set screw to secure the collar in that position.
18. Take and compare another set of radiometer readings.
19. Continue until the lower reading is equal to or greater than 90% of the higher reading.
20. Tighten set screw to lock the input end of the dual wand in position.

Notice:
If a radiometer is not available, it is recommended that Loctite Service be contacted at 1-800-LOCTITE (1-800-562-8483) to insure optimum performance when installing a new dual ended light guide.

5.4 Using Foot Switch / Remote Device

The ZETA® 7740 can also be actuated using a foot switch or by external devices. The foot switch connection is made up of a 9 pin D connector. Making a dry-contact relay closure across pins 1 and 9 can actuate the unit.

6. Care and Maintenance

☞**Notice:**

It is recommended that the UV output from the lamp be monitored regularly using a Loctite® 98720 UV Spot Radiometer P/N: 1079258. If a radiometer is not used to monitor the lamp, it is recommended that the lamp be replaced when the hour meter, located on the front panel, indicates 1,000 hours of operating time has elapsed. It is normal for the lamp output to slowly decline over operating time, however, the effective life of the lamp will decrease significantly faster if it is turned on and off frequently.

❗ **Caution!**

It is recommended that the end of the light guide be positioned no closer than ½ inch from the Loctite® product being cured. The heat transmitted by the lamp can adversely affect the properties of the cured product or possibly cause damaged to the part surface.

☞ **Notice:**

Vapors from some products may gradually accumulate on the end of the light guide, reducing the UV output. It should be inspected regularly and cleaned as necessary using isopropyl alcohol and a soft, clean cloth.

❗ **Caution!**

Avoid placing sharp bends in the light guide. This reduces the UV output and may permanently damage the light guide. If the light guide is mounted on a fixture, secure it by the metal exit fitting and not the flexible plastic section.

☞ **Notice:** The intake and exhaust fan filter elements should be replaced as needed to insure proper cooling of the power supply and UV lamp assembly. They should be inspected routinely.

6.1 Replacing the Lamp Module

❗ **Caution!**

Do not touch the lamp module reflector or the lamp. Contaminants from hands will create “hot spots” and cause the module to fail prematurely. If either are accidentally touched, carefully wipe them with a clean, soft cloth and isopropyl alcohol.

1. Switch the power off and unplug the unit.
2. Allow several minutes for the lamp to cool.
3. Remove the four screws from the sides of the housing and lift off the cover.
4. Disconnect the lamp leads by separating the Male/Female connector.
5. Pull back on the spring loaded lamp retaining bar.
6. Remove the lamp/reflector assembly from the mounting block.
7. Install the new lamp module.
8. Release the lamp retaining bar. Be sure the lamp is flush in the mounting hole.
9. Reconnect the power leads.
10. Replace the lid.
11. Press the lamp hour reset switch to set the hour meter to zero.

☞ Notice: Step 11 should only be done when a new lamp is installed.

6.1 Replacing the Lamp Module (continued)

⚠ WARNING!

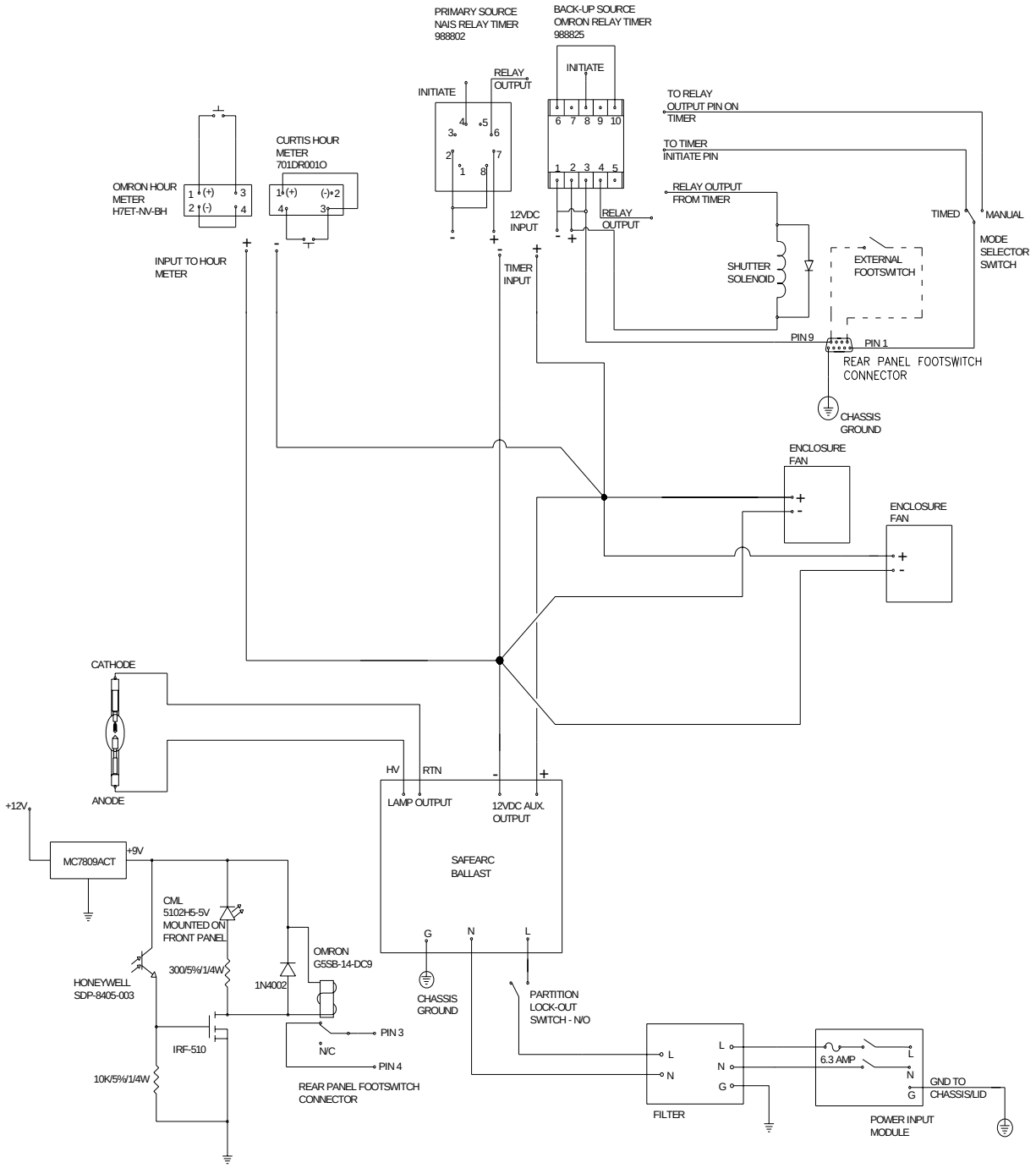
The UV lamp used in this unit contains a very small amount of mercury. Disposal of lamps should be done in accordance with state and local regulations.

7. Troubleshooting

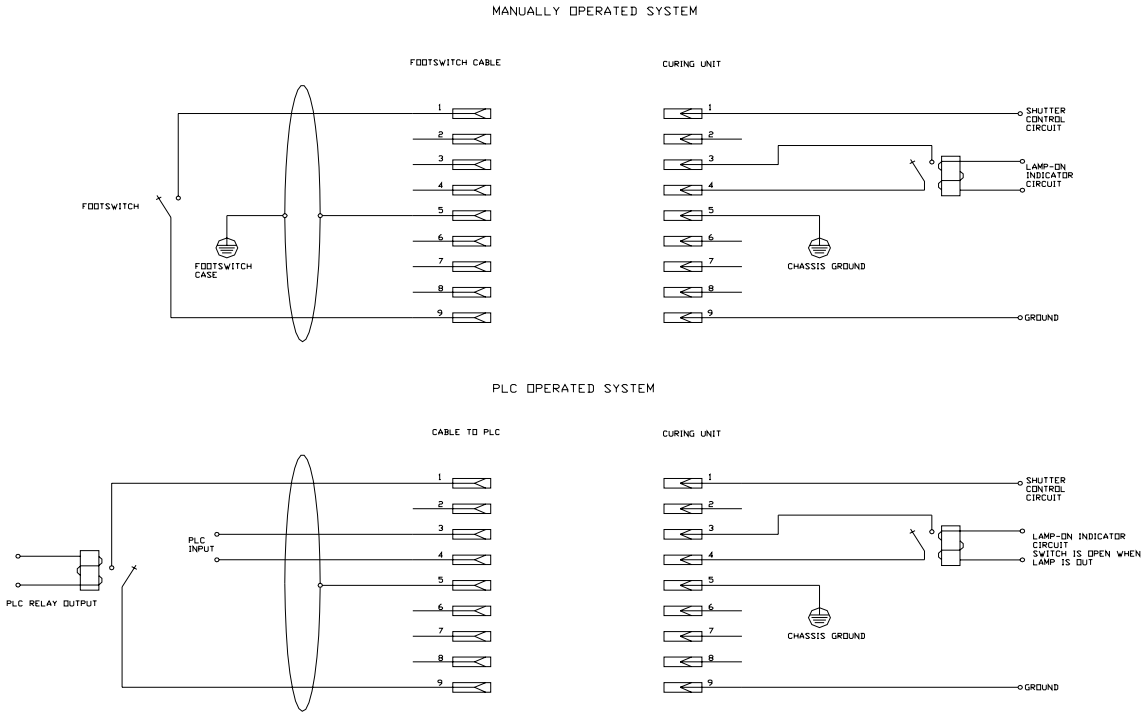
Type of Malfunction	Possible Cause	Correction
Power does not come on	– No voltage present. – Defective Fuse. – Defective Power Supply. – Defective Switch.	• Check wall circuit. • Replace fuse. • Call 800-562-8483. • Call 800-562-8483.
The shutter mechanism can be heard opening and closing, but no light is emitted from the light guide.	– Lamp failure. – Defective power supply. – Defective shutter.	• Replace lamp module. • Call 800-562-8483. • Call 800-562-8483.
Power comes on but light is not emitted from the light guide. The shutter mechanism makes no noise when foot switch is engaged.	– Foot switch is not plugged in properly. – Defective foot switch. – Defective shutter mechanism.	• Check foot switch connection. • Call 800-562-8483. • Call 800-562-8483.
All system functions appear to be operating, but the product does not cure completely, or if a radiometer is used to monitor the UV output, the power is low.	– UV output has declined due to normal lamp aging. – End of light guide has an accumulation of product or other contaminants – Light guide is not fully inserted in receptacle. – Light guide has exceeded is useful life.	• Replace lamp module. • Clean light guide with soft cloth and isopropyl alcohol. • Check light guide connection. • Replace light guide.

8. Documentation

8.1 Wiring Diagram



8.2 Pin Connections



8.3 Replacement Parts and Accessories

Loctite Part Number	Description
984818	Replacement Lamp Module
983677	Single End Light Guide (5 mm x 1M)
983684	Dual Ended Light Guide (3 mm x 1M)
951681	Single Light Guide (5 mm x 1.5M)
984770	Fan Filter Element, Quantity 5
97210	UV Safety Glasses
986051	Foot Switch Assembly
1079258	Loctite® 98720 UV Spot Radiometer
951639	Dual Wand Adapter Kit
856083	Power Supply / Ballast

9. Warranty

Henkel expressly warrants that all products referred to in this Instruction Manual for the UV Curing Wand System, (hereafter called "Product"), shall be free from defects in materials and workmanship. Liability for Henkel shall be limited, as its option, to replacing those Products which are shown to be defective in either materials or workmanship or to credit the purchaser the amount of the purchase price thereof (plus freight and insurance charges paid therefor by the user). The purchaser's sole and exclusive remedy for breach of warranty shall be such replacement or credit.

A claim of defect in materials or workmanship in any Product shall be allowed only when it is submitted in writing within one month after discovery of the defect or after the time the defect should reasonably have been discovered and in any event, within 2 years after the delivery of the Products to the purchaser. This warranty does not apply to perishable items, such as fuses and fan filters. The lamp is fully warranted for 500 hours of operation for failure to ignite. The lamp is also warranted to produce 50% of the minimum rated intial output at 500 hours of operating time, when measured using an in-calibration Loctite 98720 UV Spot Radiometer, and a new Loctite 5mm x 1000mm lightguide in a fully straight orientation. No such claim shall be allowed in respect of products which have been neglected or improperly stored, transported, handled, installed, connected, operated, used or maintained. In the event of unauthorized modification of the Products including, where products, parts or attachments for use in connection with the Products are available from Henkel, the use of products, parts or attachments which are not manufactured by Henkel, no claim shall be allowed.

No Products shall be returned to Henkel for any reason without prior written approval from Henkel. Products shall be returned freight prepaid, in accordance with instructions from Henkel.

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